



# Human Factor and Hospital Design

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## Abstract

The physical anthropologists have been concerned with the documentation and description of human body size variability and its application to design. A significant problem continues to exist, however, in the communication of such knowledge to the wide variety of potential users, the design community.

The critical problem is to establish a height that will accommodate the majority of users, taking into account the significant difference in eye height between people of small and large body size. Of the drawings that follow is a series concerned exclusively with this aspect of human dimension. One interesting observation is that the difference in eye height between that of a viewer of very small body size and that of one of very large body size is almost twice as much when both people are standing than when both are in a seated position.

## Introduction

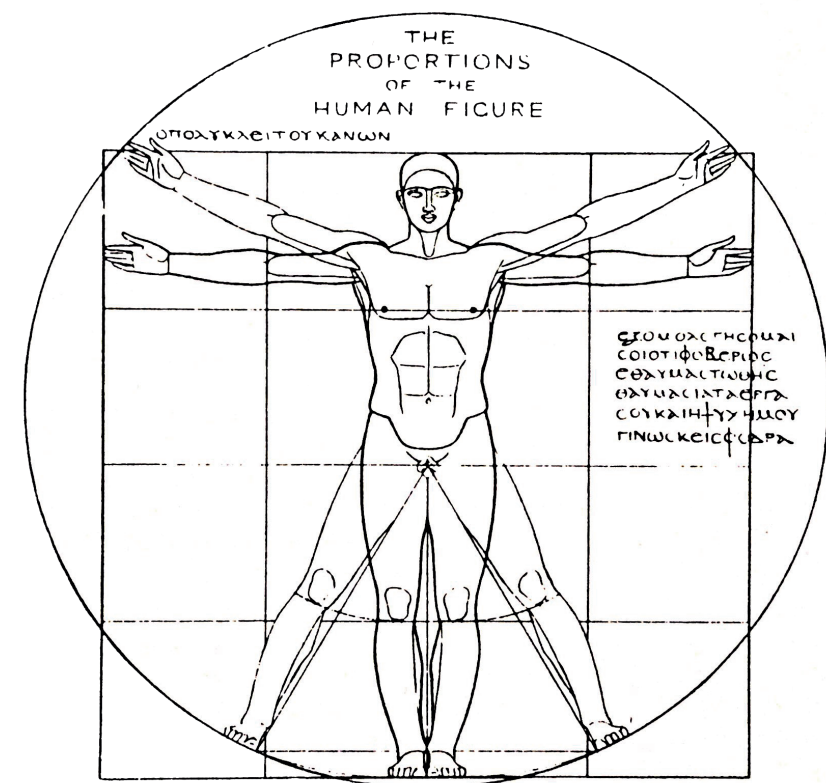


Figure I-2.  
Vitruvian Man by  
John Gibson and  
J. Bonomi,  
London, 1857.

For the human body is so designed by nature that the face, from the chin to the top of the forehead and the lowest roots of the hair, is a tenth part of the whole height; the open hand from the wrist to the tip of the middle finger is just the same; the head from the chin to the crown is an eight, and with the neck and shoulder from the top of the breast to the summit of the crown is a fourth.

Then again, in the human body the central point is naturally the navel. For if a man be placed flat on his back, with his hands and feet extended, and a pair of compasses centred at his navel, the fingers and toes of his two hands and feet will touch the circumference of a circle described therefrom. And just as the human body yields a circular outline, so too a square figure may be found from it. For if we measure the distance from the soles of the feet to the top of the head, and then apply that measure to the outstretched arms, the breadth will be found to be the same as the height as in the case of plane surfaces which are perfectly square.<sup>1</sup>

## Issues

It should go without saying that hospital designs always keep the patient in mind. But around the world, an aging fleet of stoic post- World War II and '70s era hospitals point to the fact that, historically, healthcare facilities have been designed to accommodate medical equipment and building mechanics – not people.

Fortunately, in a recent paradigm shift, consideration of the human factor in healing environments has changed the way hospitals are planned. Interior designers and architects have embraced the concept of patient-centered care, a term coined in the latter part of the 20th century. What used to be sterile, bland, clinical environments are morphing into warm, welcoming, user-friendly spaces.

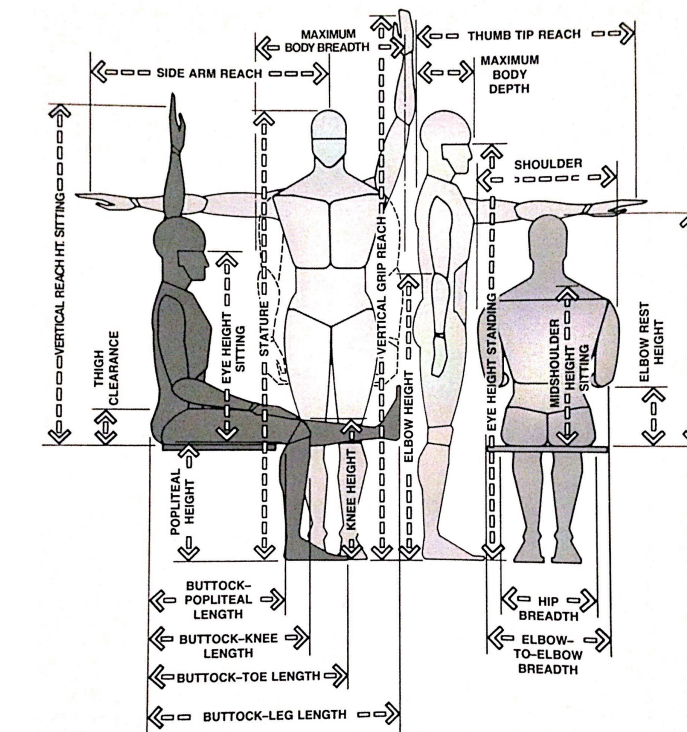
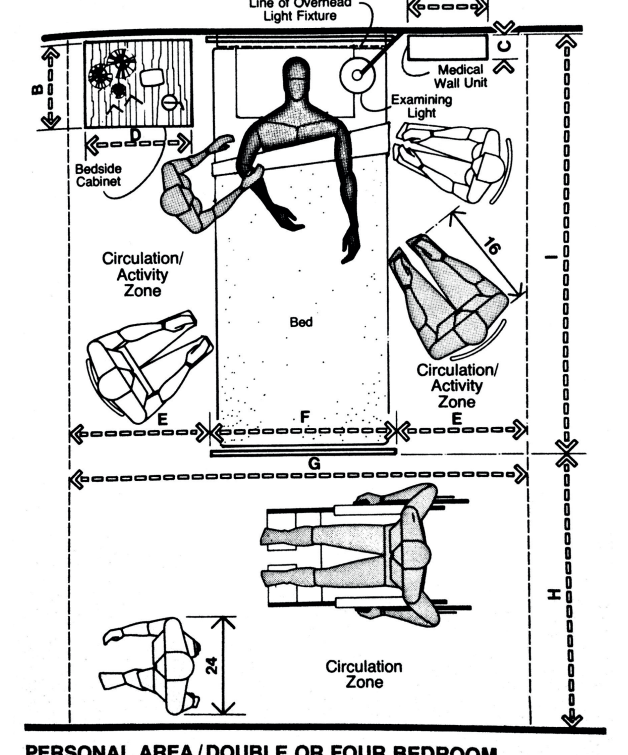


Figure 1-7.  
Body measurements of  
most use to the designer  
of interior spaces.



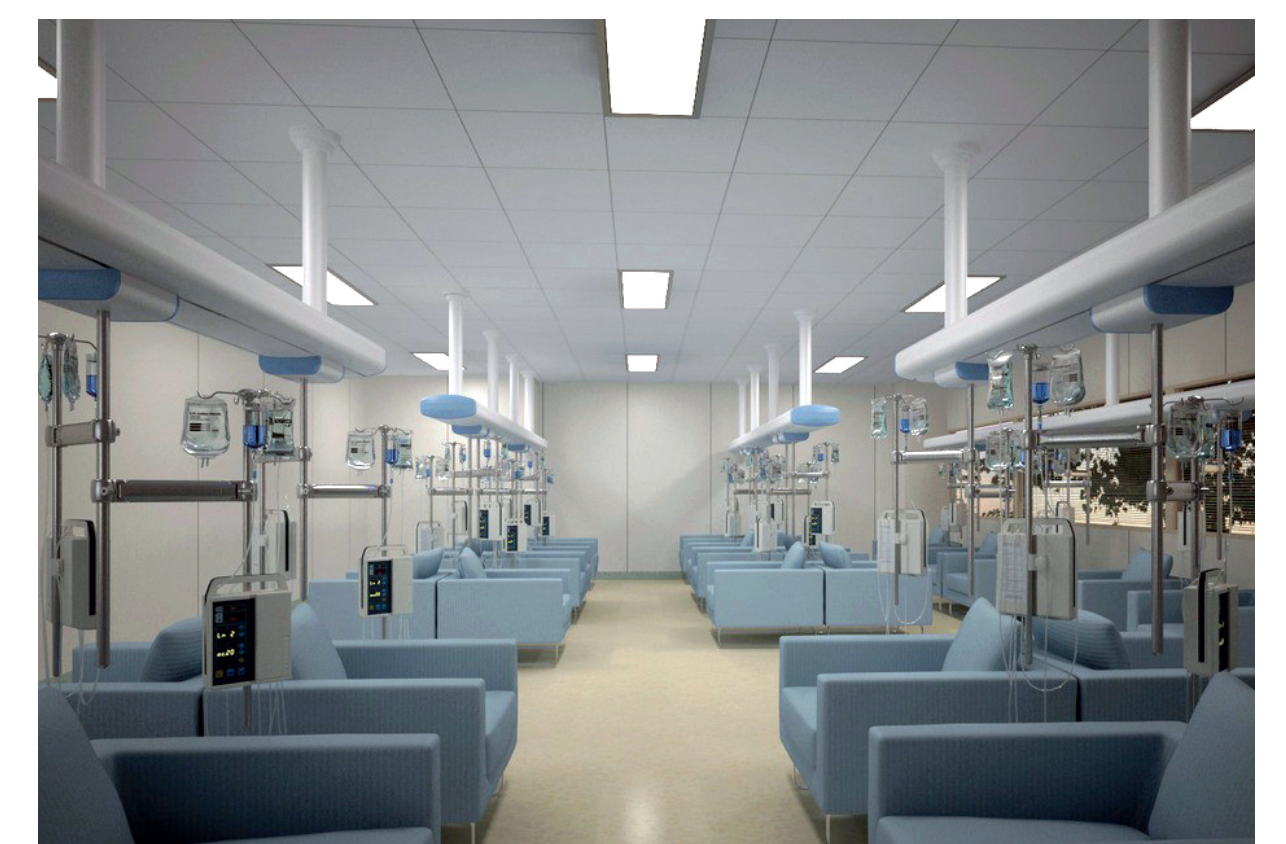
6.3 Hospital Rooms.  
Personal Area /  
Double or Four Bed-  
room.

## Development - Natural



Designers and architects are also becoming aware of the connection between nature and healing such that, where possible, they incorporate patient rooms with windows overlooking green spaces, water or other natural settings. Even simulated nature views seem to have a profound impact on patients.

## Convenience



One of the most noticeable features in a patient-centered room isn't for the patient at all, but for his or her guests. The single backbreaking chair wedged into a corner has been replaced with a large "family zone" that includes comfortable seating and flooring, a pullout sofa and often a desk. For overnight visitors, it's a welcome retreat.

## Reference

The Human Factor By David Whitney

HUMAN DIMENSION & INTERIOR SPACE (A Source Book of Design Reference Standards) By Julius Panero, AIA, ASID and Martin Zelnik, AIA, ASID

## Acknowledgement

Thank you to my advisor prof. Marsha Matto from SASD at the University of Bridgeport for your help on this project.